

Holding The Digital Mirror Up to Nature:

a practice-as-research project exploring digital media techniques in live theatre.

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Attestation of Authorship

DECLARATION

This thesis is my own work and, to the best of my knowledge and belief, it contains:

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Ethics approval for Ethics Application Number 08/92 *An exploration of the use of digital media in live Shakespearian theatre in New Zealand* was granted on 30 June, 2008 by Auckland University of Technology Ethics Committee.

No confidential material is contained in this exegesis, including the DVD or in the Performance.

Holding The Digital Mirror Up to Nature:

a practice-as-research project exploring digital media techniques in live theatre.

Abstract

Is an actor performing live if that actor is out of sight in the wings and appears on stage as a computer-mediated representation? Is co-presence with such a mediated embodiment problematic for the performer? This project seeks to explore the use of digital media elements, from the perspective of the actor, in the collaborative process of devising, designing, rehearsing and performing a Shakespearian theatre production. It raises issues of the creative possibilities that applications of new technologies afford and of a changing perception of the nature of liveness. Can digital media techniques usefully enhance the liveness of performance and extend the audience's experience of the production? Specifically, can it augment their perception of themselves, mirrored on stage? Exploring the usefulness of digital media techniques takes a theatre practitioner into the intermedial, liminal spaces where the two fields converge. These are spaces of possibility where new ways of working might emerge. This thesis is presented primarily as an experimental performance and is contextualised by this exegesis with its written and DVD components.

Background to this project

This project has been a journey of personal discovery. It has helped me to reflect on my creative and professional practice and on what draws me to theatre, digital media and academic research. All are spaces where the imagination can soar and narratives evolve. I wanted to see what new things might emerge in the liminal space created where these worlds intersect. For me, theatre is by definition a group process. There must be at least a performer and an audience. This study would not have been possible without extensive collaboration with a whole team of theatre, video and digital media practitioners. I have endeavoured to acknowledge their input wherever possible.

My background as an actor and as a digital media producer is relevant because the project sets out to experiment with technology from the actor's perspective. Since I am following a hermeneutic approach in this research, what I

bring to the research will have a direct bearing on the outcomes. As Trimingham (2002) observes, in hermeneutics the knowledge we bring and the questions we ask determine the answer. Of course, this is not to deny the collaborative nature of this project. Rather, I am acknowledging that there are two levels of agency connected with my role in the project. I am a researcher exploring a process in an academic sense and a practitioner "speaking" of what I know (and do).

During the more than twenty three years I have worked as an actor on stage and screen in New Zealand I have encountered everything from the traditional large company model to experimental, cooperative and devised theatre. My training and experience in theatre and, to a lesser extent, screen acting derives from the prevailing tradition in most New Zealand theatre companies in the 1980s and 1990s. I was trainee actor at Auckland's Mercury Theatre (the country's largest company) and concurrently attended the Theatre Corporate Drama School. Here discussions of the roots of modern theatre in Stanislavski and Grotowski

and the traditions imported by senior company members from their alma maters such as RADA came together to create exciting and exploratory theatre on an intimate, if somewhat traditional, scale. My emphasis has not been on physical, musical or mask theatre, nor has the solely spectacular featured in my work. I was drawn to plays which explored the human state; mining individual truths for audience members by making them feel and think about what it is to be human. That is why Hamlet's line about the purpose of playing being to hold a mirror up to nature has such resonance for me and why I chose to use it in the title of this thesis.

The creative context for the project is the boundaries provided by low budget theatre companies. Undertakings by such companies are, of necessity, constrained to tight timeframes and simple, low cost sets and venues. Development and rehearsal times are tight with four weeks being the norm and total budget being in the range of \$10,000 to \$100,000 New Zealand dollars in my experience. My goal is to find solutions which will assist

such theatre practitioners to incorporate useful and appropriate digital media techniques in their productions. I am using the term digital media technique to encompass any theatrical device which utilises a computer in its creation or delivery. Examples include projection of video set elements and visual and aural projections which are responsive to the actor.

Context (performances & written discourse)

The history of experimental use of digital media within live theatre has mostly been within the framework of the avant-garde. Theatre pieces have been devised to centre on new techniques, often from post modern, non-narrative perspectives. Moving images, in the form of film and video have been staged for as long as the technology has existed. Gertie the Dinosaur an animated film by Winsor McCay (1914) was used as part of a live vaudeville act with McCay interacting with a projected cartoon character. The advent of digital media has opened up new possibilities, most notably the responsiveness and immediacy of control over media afforded by computers. The Gertrude Stein

Repertory Theatre was one of the earliest exponents of integrating digital elements in their productions. Control over the generation and playback of these technologies can now be vested in the live production team or even in the performer. Now the discourse has become centred on liveness, presence, embodiment and the digital double and the relative positioning of the live and the mediated. In order to fit within the framework of a master's thesis, I have chosen to delimit this project and to focus on exploring the dramaturgically useful application of a small selection of digital media techniques in a low budget production of Shakespearian scenes.

Method

The most useful and appropriate research methodology I discovered was the evolving field of practice-as-research. See Alison Richards' (1995) pioneering work for the Australasian Association for Theatre Drama and Performance Studies: Performance as Research / Research by Means of Performance or Robin Nelson and Stewart Andrews' (2003) report on best practice guidelines

on practice-as-research doctoral studies in the United Kingdom. This has grown as a vital way of locating the discovery of new knowledge within the doing. In other words it asserts the primacy of the practice as a medium for the growth of new knowledge. It is a method which has many similarities to any professional theatre practitioner's work but has added an element of rigorous planning and reflection based on research questions. Following the practice-as-research model, my project places the performance as the ultimate exploration of the research question. This exegesis helps to locate the performance within its theoretical context as well as within the broader context which acknowledges that creative performance practice includes the production of knowledge.

Outcomes

By definition, Master's degrees do not automatically involve the time and space commitments necessary to uncover new and original knowledge and advance practice internationally. However what I hope to achieve with this project is a new synthesis and framing of knowledge within the context of New Zealand theatre and from the

perspective of an actor. I hope that the insights gained will be of value to the communities of professional theatre companies, actors interested in engaging with new technology and digital media practitioners interested in the live performance of their work.

Introduction

“the purpose of playing, whose end, both at the first and now, was and is, to hold, as 'twere, the mirror up to nature; to show virtue her own feature, scorn her own image, and the very age and body of the time his form and pressure.” (Hamlet III,2,22-24).

This exegesis will put the laboratory performance, which constitutes the major part (70%) of this thesis, into context. In it I will describe the central issues driving my enquiry and the methods I have used. These have been derived from relevant literature, including experimental performances combining the live and the digital. There is an accompanying DVD video showing some rehearsal workshops and pre-recorded material for the performance. There is also a video of the second performance of the play. However, before watching the DVD the viewer should be aware that a video is no substitute for live performance. It cannot capture the interactive atmosphere and introduces a flat, two dimensional reduction in scale and immediacy. As Causey puts it, performance is an “orbiting

disappearance which resists the technology of reproduction” (Causey, 2006, p.30). I include the video here for interest sake as a form of semi-permanent documentation.

The exegesis is divided into sections and initially focuses on the central issue I am exploring and the methods I have used. The next section is a summary of the critical and creative context in which this project is located. In other words it outlines what has been written or explored through performance in this area and how my project relates to it. This is followed by a discussion of the process I have used in my enquiry and the analysis and interpretation of my practice in the series of workshops I ran. This is followed by a brief introduction to the laboratory performance “Holding the Digital Mirror up to Nature”. This performance is the

application of my methodology and makes up by far the largest proportion of my thesis. The final section is an evaluation of what I learned and a discussion of why practice-as-research was the best methodology to use.

Research Issues and Methodology Design

“In a living theatre, we would each day approach the rehearsal putting yesterday’s discoveries to the test, ready to believe that the true play has once again escaped us.”
(Brook, 1968).

The issues

The central issue under exploration is that of the use of certain digital media techniques in live theatre. The specific perspective I chose to adopt was that of my own practice as an experienced professional actor and as a digital media producer. I wanted to see if video multi-screen projection, live animation and the video confessional might prove

useful aids for the actor and enhance the theatre experience for the audience.

The actor’s perspective is important here and the usefulness of techniques is measured against it. I would consider the term useful to include such things as an ability to enhance the quality of the connection with the audience. If, for example, a technique made it easier for an actor to create a character which conveyed the characteristics which the script demanded then it would be useful. If a technique helped the audience to gain a deeper understanding of any thematic meaning the playwright intended then it would be useful. Techniques might also help create a sense of the metaphorical world of the play or provide glimpses into parallel metaphorical worlds. In the case of Macbeth’s witches and Hamlet’s ghost which inhabit other planes as well as the corporeal world of the other characters and of the audience I suspected that the techniques might be useful to help make the parallel realities more accessible. Some techniques have a direct bearing on the actor’s work while others are production

elements which complement the actor's work. In either case, for the purposes of this research, I would consider a technique to be useful if it made the audience think, feel or identify more deeply with the performance. For the purposes of this project, these issues are framed through the lens of the actor - it is normal for actors and directors to consider techniques and ideas that enhance audience response (and this response, they believe, can be measured in a variety of ways). Anything which detracted attention from the core focus of the play or which jarred with the audience would be inappropriate. These techniques would be useful in creating a reflection for the audience to see themselves more clearly.

Methodology : Practice - as - Research

The research was designed around practice-as-research methodology and more specifically performance-as-research. The approach I used was adapted from Melissa Trimingham's (2002) hermeneutic-interpretative spiral of action and reflection cycles and influenced by Action

Research and specifically Brad Haseman's pioneering work. He called his approach the "Performative Research paradigm" and "inventive work-in-progress" (Haseman, 2006).

This study necessarily bridges the academic research world and the professional theatre world, so the result is neither wholly "academic" nor "performance". Practice-as-research is an emerging field with many possible research methods developing within it (Haseman, 2006). For the purposes of this project I chose the most appropriate which fit my pre-existing skills as both professional actor and producer of digital media.

While a great deal of insight might be gained to the efficacy of these digital media techniques through studying what others were writing and had already done, I felt that there was really no substitute for practical exploration. . Here, I was placing the "actor" role at the forefront of the work. Actors are accustomed to discussing the performance

preparation and then getting up “on the floor” to explore in time, space and relationships the meaning of the piece under rehearsal. It is not until the dynamics of the rehearsal come into play that certain elements can be explored. The reflection on discoveries is both implicit in the actors’ subjective work and experimentation and in the director’s objective “outside eye”.

I decided to create a one man show as a piece of practice-as-research. It evolved into a compilation of scenes from Shakespeare, tied together by a theme of parallel worlds, which explores the use of digital media.

The type of theatre that is the focus of this study is best described as traditional in that it is script-based and involves real human actors co-present in the same performance space as a real human audience. Exploring extrapolations from this traditional model such as Herbert Fritsch’s *hamlet_x* in which he re-imagined Hamlet on the internet, are outside the scope of this study (Wiens, 2006). A main focus is the “digital double” in both performance and

preparation for performance. I will approach this using Steve Dixon’s taxonomy of four types of digital double (See Dixon, 2007). It is also helpful to consider the types of relationship between performer and media that might exist. In this I am following David Saltz’s twelve definitions (See Saltz, 2001). I have chosen to focus on a small subset of these which is not only proportional to the limited resources available to me but is also reflective of the emphasis of my study.

Liveness

The term “live” is the source of much debate amongst scholars (Auslander, Phelan, Causey). In essence this debate is about how to define a “live” performance with respect to other, traditionally unrelated ideas (such as mediation). I use “liveness” in much the same way that Auslander proposed when he argued that the live and mediated were mutually dependent. Phelan defined liveness as something which could only happen here and now without any form of mediation and with the

presence of an organic human body (Phelan, 1996, cited in Santana & Iazzetta). However Auslander considered that almost all live performances now incorporate some form of media reproduction (Auslander, 1999). This, in Causey's terms, incorporates both the traditional, face to face theatre model and an expanded version which is agency-extended; incorporating media elements (Causey, 2006).

Furthermore I agree with Sontag when she suggests that a very important part of liveness is the ritual event of the theatre (Sontag, cited in Causey, 2006) and Lavender when he asserts that there is an element of liveness which encompasses the fullness of the possession of the moment "having and holding it more completely". (Lavender, 2002, p. 188).

I am primarily interested in techniques which might usefully enhance the liveness which embodies truths in the immediacy of the performer and audience interaction. Both performer and audience are looking for elements in the play which they can believe in. In other words they are searching for truths. These may be ideas or illumination of

the human condition. I believe there to be a certain reality of connection between characters and between characters and audience which flows from liveness. For me it is something that is felt in the moment and not necessarily reflected upon. When that "willing suspension of disbelief for the moment" (Coleridge, 1815) occurs there is an immersion in the drama and an empathy between participants. The term empathy here denotes a response to a performance whereby an audience member willingly and sympathetically immerses themselves sufficiently in the drama to follow emotion and thought while still maintaining an awareness that they are participating in a story. This is in contrast to the concepts of immediacy and hypermediacy which are currently the centre of much debate amongst digital media scholars. Immediacy refers to the total immersion of players in virtual reality productions to the extent that they become unaware of the mediation (Bolter and Grusin, 1999). Hypermediacy is the complementary state where the mediation is foregrounded. In theatre terms this would be in almost Brechtian fashion. Brecht emphasised the social and political rather than the naturalistic and psychological realism favoured by

Stanislavski (Baron & Carnicke, 2008). This can result in a player or audience member emotionally distancing themselves from a production and primarily engaging their critical and analytical faculties in order to better “change the world” through praxis.

There is something exciting and spectacular about the new but when the initial excitement has diminished we are left with the question – is it useful? Just because you can do something, does that mean you should? David Saltz expressed the aims of the University of Georgia’s Interactive Performance Laboratory as “to incorporate digital media into theatre without compromising the spontaneity of live performance” and “to make the media dramaturgically meaningful.” (Saltz, 2001, p110) This philosophy also underpins my practice-as-research project. All explorations are predicated on a professional imperative to explore the truth of the play *appropriately*. For me, this appropriateness is primarily located in the actor’s worldview

and experience. The project is designed as practice-as-research with the process and resulting laboratory production embodying and not just presenting the theory.

It is my sincere hope that even though this project is an exploration of techniques it will result in a theatre production which can stand on its own merits as a performance. Like any production it will have to engage the audience as intimately as possible with the search for the truth in the play. It needs to be valid from a research perspective which includes creating an entertaining and engaging play.¹

¹ I am placing myself within a tradition of theatre which sees understandings about human nature as being things which each audience member will derive from the meanings generated within the performance. These meanings come from the writer’s intentions in the first instance and then the interpretations of the production design, direction and performance team and then from the meaning generated at the moment of performance by the actor. This final meaning generation flows from the interplay between audience and performers.

The sense of the term “truth” here is that which Peter Brook uses when he describes the rehearsal process: “In a living theatre, we would each day approach the rehearsal putting yesterday’s discoveries to the test, ready to believe that the true play has once again escaped us.” (Brook, 1968).

This standard method of rehearsal to which Brook alludes is a pattern of creative discovery followed by reflection, reassessment of questions and returning to the creative practice to explore amended questions. The cycle then repeats. I would like to suggest that this process closely parallels a hermeneutic-interpretative spiral of action and reflection cycles which is the methodology, adapted from Trimingham and Haseman, which I have adopted for this project. It is an evolving circular progress and while the creative processes of professional intuitions may appear disorderly and complex, the planning and reflection is not (Trimingham, 2002). Trimingham tries to include structures borrowed from the scientific method concentrating on a single, discrete problem or solution in each workshop. I would rather embrace a holistic approach, derived from

professional practice, that acknowledges that many questions and solutions are explored in rehearsals simultaneously. This is less constraining and more appropriate to artistic enquiry.

One major difference between the professional practice of producing a play and research methodology is the precise focus of the endeavour. For a theatre company the play is indeed “the thing”. A production is a collaborative event, seeking to engage the audience in a search for the truth in the script. Notice that I use the practitioner’s word “script” with its connotations of a mutable launching pad, an element in the collaborative process rather than the more academic “text”. With its connotations of something fixed to be held at arm’s length and deconstructed. The performance is not only the live publication of those truths as discovered during the rehearsal process but also an active discourse with the audience.

Some would argue that this form of theatrical-event-as-publication lacks an element of external validation and does not allow for participation in discourse (Richards, 1995). However this exegesis contains reflection on the theatrical production and the research it embodies and thus engages in discourse. A creative project such as this is open ended and seeks to explore the usefulness of the techniques holding it up for discussion in the performance. As Saltz puts it in his Editorial in Theatre Journal:

“The recognition that the performance event is a vital site for generating meaning, rather than merely for illustrating the meaning of pre-existing texts, is now deeply entrenched within theatre studies. More significantly, so too is the recognition that the performance event itself is constituted, not simply by acts performed on stage (or wherever the performance occurs), but equally by acts of spectatorship and subsequent acts of critical and historical reflection disseminated in the popular press and through scholarly discourse...” (Saltz, 2006, Editorial Comment. Theatre Journal, Volume 58, Number 2, pp. ix-x).

Haseman felt that research of this nature should be primarily reported in the form of performance and not as

words and numbers. He saw any such translation of the research as a dilution and impoverishment of epistemological content embedded and embodied in practice (Haseman, 2006). He identified a need for research in this field to assert the primacy of practice. To that end he believed that research methods should grow out of each researcher's own performance practice. Many performance-as-researchers have resisted the technique of documenting their work through the use of video or words (Rye, 2003). They often feel that a video of a live performance is an unavoidable reduction of an interaction which exists momentarily in time and space to a flat, stale and unprofitable facsimile. Furthermore they worry that the enduring documentation will eventually subsume the performance in discourse. I believe this to be a very valid concern but have chosen to document the research with both video and words as these are the only tools available to me at present.

Another difference between an actor's perspective of professional practice and mainstream academic research is

in the actor's mindset. It is my opinion that for an actor, mind and body work in concert in performance. The critical faculty; the ability to objectively analyse, is not at the forefront of an actor's mind during a performance. An actor walks a tightrope between an analytical modality and an instinctual re-active modality. The emphasis during the creative process of acting is on re-acting; on being receptive and listening. Actors who listen to themselves, who are too analytical and self aware will appear to the audience as affected. A continuum exists between these poles and each actor must find a place to inhabit. If an actor is too far away from the objective pole then the performance, while excitingly live, runs the risk of being unaware of the audience and dangerously caught within a constructed reality of "the moment". This may, paradoxically alarm the audience, drawing their attention to the acting and making them more conscious of the artifice. On the other hand if the actor is not at all subjective and shapes their performance from a position of objective technique then the performance will lack an element of psychological realism and liveness. For me and for most actors neither extreme will do. The appropriate position on

the continuum may well vary continuously, veering close to the instinctual and reactive during moments of creative exploration during rehearsal and in performance. Many actors and certainly any engaged in practice-as-research, will be comfortable sitting closer to the critical pole during times of reflection and shaping.

Research questions

The research questions I had at the outset of the project evolved during the discovery. Initial questions included:

- Is an actor embodied if that actor appears on stage in the form of a computer-mediated representation?
- What new creative possibilities are afforded by new applications of digital media technologies? In process and in performance?
- What are the relative positions of the live and the mediated? Could one overwhelm the other?

The primary question emerged as:

- Is co-presence with a mediated embodiment or digital double problematic for the actors onstage? If so what are the practical and technical requirements needed to allow live and mediated elements to function symbiotically?

Hypothesis statement

That there **are** new, useful and appropriate digital media techniques for productions from the perspective of the actor.

Reviewing Research Contexts – What Has Been Written and Done in the Field

There is a wealth of exploration taking place in various performance fields at present although, as Auslander laments, much of it is in its infancy and focuses on the techniques rather than the extrinsic performance possibilities (Auslander, 2005).

A survey of what has been written and explored through performance in the past provided me with inspiration and a contextual framework for my enquiry.

Dance – putting control in the hands of the performer

The disciplines of dance and performance art have embraced the digital and found applications for interactivity. Troika Ranch, an innovative dance company, for example has experimented for some time with equipment to capture the physical movements of dancers and then process that information to produce sounds and or images “live”. The dancers can, for example, paint the set and create the

music with their movements through the use of sensors which capture their movements and computers which process this data to generate graphics for video projection. One of the results of this is they can never get out of time. Troika Ranch see one of the benefits of the performer being able to manipulate the digitally-produced sounds and images as being an enhanced sense of liveness. Co-founder Mark Coniglio says: “I provide interactive control to the performers as a way of imposing the chaos of the organic on to the fixed nature of the electronic, ensuring that the digital materials remain as fluid and alive as the performers themselves.” (Coniglio, 2004, p7.)

This represents a shift in the capability of the performer facilitated by digital media technology. The control of design elements is vested in the performer at the time of performance instead of just in the designers at the time of rehearsal or production planning. This relates to one of the techniques I explored in the scene from *The Tempest* – the

use of a manipulable mannequin, to use Dixon's taxonomy.

²

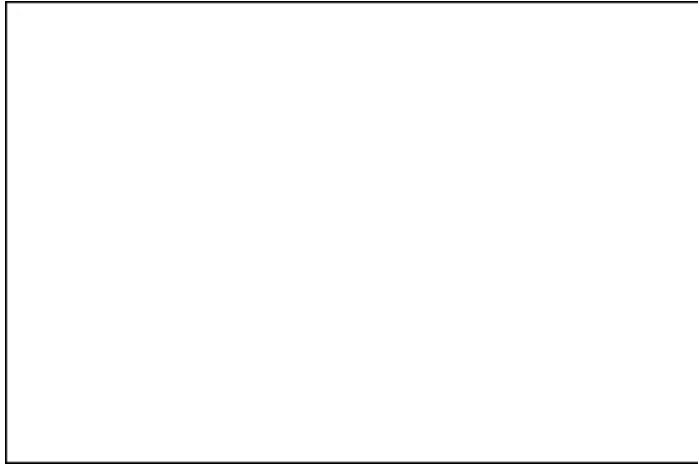


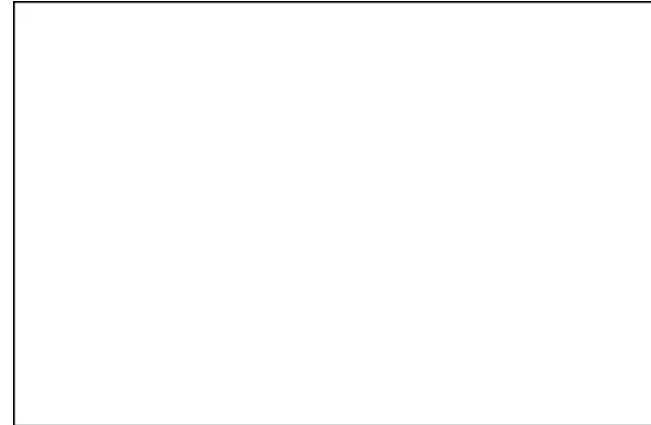
Figure 1 Troika Ranch's 16[R]evolutions (2006) – Lu Sinew, photograph credit – Richard Termine <http://www.troikaranch.org/gallery16Rev/g-16rev.html>

Performance art – digital prosthetic enhancement

In the diverse world of performance art a vast range of digital media techniques have been utilised. Artists such as

² For logistical reasons, this technique was not included in the final performance.

Stellarc have experimented extensively with the notion of a cyborg – a human being augmented mechanically or digitally. Stellarc famously created a third robotic arm for himself.



*Figure 2 Stellarc and his prosthetic arm (Dixon, 2007)
<http://www.stelarc.va.com.au/photos/04.html>*

One way of perceiving this phenomenon is as a prosthetic device to enhance the capability of the performer. I saw my experiments with Ariel from *The Tempest* in this light. To fit the aesthetic (and the directions) of the play his performance ability was enhanced and he could literally take flight. In later performance art events Stellarc

attached devices to himself to enable the audience to physically manipulate his body. Similarly Susan Kozel explored telematic performance where co-presence is facilitated by video. In “Telematic Dreaming” she set up a bed with a video projection of herself lying on it. Viewers could climb up onto the bed and interact with the video. Kozel was in another room responding to what she saw of the other participants via a video monitor. Participants found themselves reassessing relationships. They found that the distance afforded by the video changed their perception of intimacy and led them to relate in ways they would have considered inappropriate if the presence had been physical. Another example from Palindrome features a digitally embodied video projection of Emily Fernandez interacting with passers by. Her image is projected onto the footpath and responds in pain when it is stepped on. The image is prerecorded but interactive. Sensors detect the proximity and location of passers by and software selects and plays video which is responsive to this data, thereby giving the impression that the video of Fernandez is humanly aware of them. This, in Saltz’ terms is dramatic

media of a high order and compares with the use I made of video recordings of characters in Hamlet.

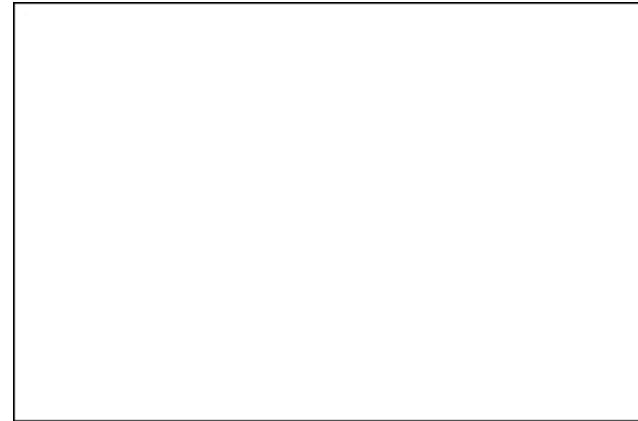


Figure 3 Emily Fernandez in Schlamp (Fernandez, 2003)
http://www.systemhaus-weiss.de/video/schlamp3_512k.wmv

Theatre – the avant-garde

Theatre companies such as the Wooster group, The Builders Association, Robert LePage, Blast Theory, and Dixon’s Chameleons Group have done much to research the use of digital media (Dixon, 2007). The Chameleons Group are based in an academic setting and conceive their productions as research. They situate their work within the

conceptual framework of Artaud's theatre of cruelty and his theories of the double play a central role in their performances. The Chameleons Group follow Artaud in exposing audiences to enlightening cruelty and seek to find universal truths in depicting humanity alongside digital representations of their uncanny doubles. They utilise projected video to create extra spatial frames in the mise-en-scene which become psychic dimensions.

Much of this research has resulted in performances of devised theatre where the central concern has been the technique and the narrative has been completely subjugated to the experiment. The Wooster Group have engaged with established plays such as Miller's *The Crucible* and explored a large range of performance styles but their usual method was to devise works and use digital media to comment on ideas (Gieseckam, 2007). My thesis however sets out to explore the usefulness of techniques within a different context. The performance outcome I intend to produce will be not an adaptation based on Shakespeare but rather a performance of Shakespearian

theatre which happens to have an exploration of digital media techniques as one of its components.

The aim of the project is a small scale compilation of scenes from Shakespeare, given the limited resources available. The limitation on resources is however a strength, since one of the foci is on developing processes and a toolset which would be of use within the New Zealand professional theatre context. I therefore assembled a team of collaborators to work through a series of workshops culminating in a one man show. A range of different directors was involved – each bringing their own approach and ideas.

A conceptual framework

Dixon's (2007) concept of the digital double provided a conceptual framework for evaluating the digital media techniques in my enquiry. Dixon provides a framework for understanding the various types of digital double that might apply to "live" theatre. The first is the ***digital double as reflection***. Dixon relates this type to the myth of Narcissus where the viewer's gaze is held seductively and ultimately destructively. In Susan Broadhurst's *Blue Bloodshot Flowers* (2001) Jeremiah, an interactive character with a degree of artificial intelligence, is programmed to respond to audience members. It looks towards them and alters its facial expression depending on the volume and proximity of the attention it receives.

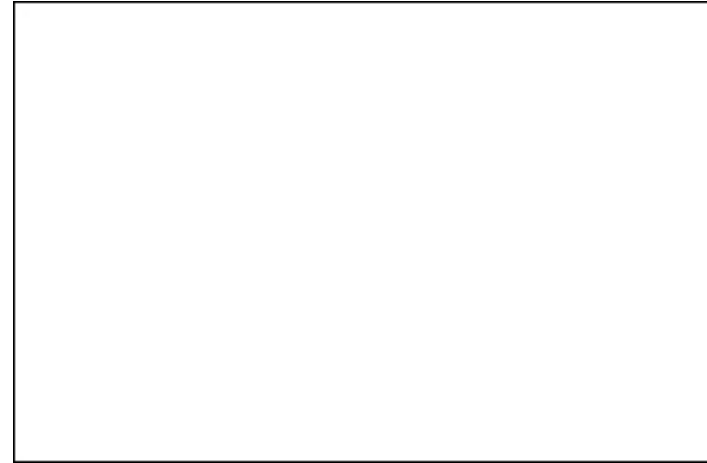


Figure 4 *Jeremiah, a character with rudimentary artificial intelligence (Broadhurst)*
<http://people.brunel.ac.uk/%7Epfstssb/>

Viewers are fascinated by the experience and, in Dixon's view, could be said to be gazing at humanity's technologised future. If the Narcissus myth is followed to its logical conclusion then that future will ultimately see the triumph of the digital over flesh and blood.

In *Head* by Nightsong Productions, Chris Jannides and Theatre Stampede a disembodied head takes centre stage as a video projection on a large polystyrene blank. It is very much a digital double which reflects the audience's

consciousness. Having no body it forms a blank slate which the audience can project their interpretations onto.

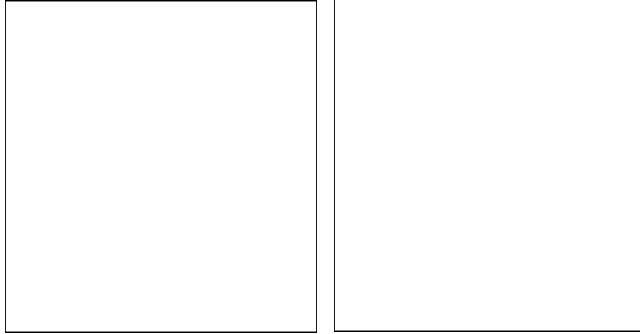


Figure 5 Head (Nightsong Productions, Chris Jannides, Theatre Stampede)
<http://www.theatreview.org.nz/reviews/printreview.php?id=608>
http://www.viewauckland.co.nz/auckland_festival_ak07_head_galatos_index.html

Dixon refers to Freud's concept of the uncanny and the intimations of mortality that seeing a double or a doll can evoke. Welby Ings' short film "Boy" (2004) uses the visual motif of dolls to this effect. They have an are deeply disturbing and yet are hard to dissociate yourself from. They appear like angels of death and silence and seem to represent a shattered childhood.

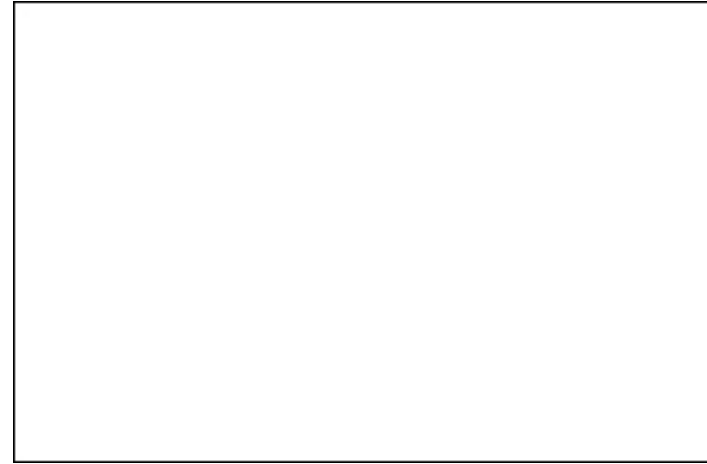


Figure 6 Digital double as reflection - Image from Boy (Ings, 2004)
<http://www.boyshortfilm.co.nz/wallpaper5.jpg>

However I do not think a mirror needs to subsume anyone who gazes into it. It can also serve to bring self enlightenment as Shakespeare intended in Hamlet's advice to the players. He tells them that the purpose of acting (playing) is to hold a mirror up to nature. In Renaissance terms a play is an image of actual life. Hamlet's plan to get the traveling players to present a performance mimicking the regicide he suspects Claudius of is very specific. However it is also a manifesto for performance. If modern techniques in creating digital mirror reflections can be used to fulfill Hamlet's advice to the players, shedding light on ourselves, then my hypothesis will be partly proven.

The second type is the **digital double as alter ego**. Much critical response to this type of double has focused on the concept of a double which deceives the audience and usurps the real. Dixon, however, perceives most use of this type of double in theatre as being completely transparent to the audience. The audience delights in understanding the difference between the two and actively seeks to understand the artist's message in juxtaposing them. This example from Troika Ranch's "Future of Memory" (2003) has a huge digital projection appearing concurrently with the performer. The audience here has no doubt as to which is the progenitor and which the alter ego. The sheer scale and novelty of the digital projection and the status given to the video image in our media obsessed society would suggest that it will command focus. This favouring of the technologised media could pose problems for the actor and was interesting to explore in my project. I chose to adapt this type for Hamlet's "O, what a rogue and peasant slave am I" soliloquy.

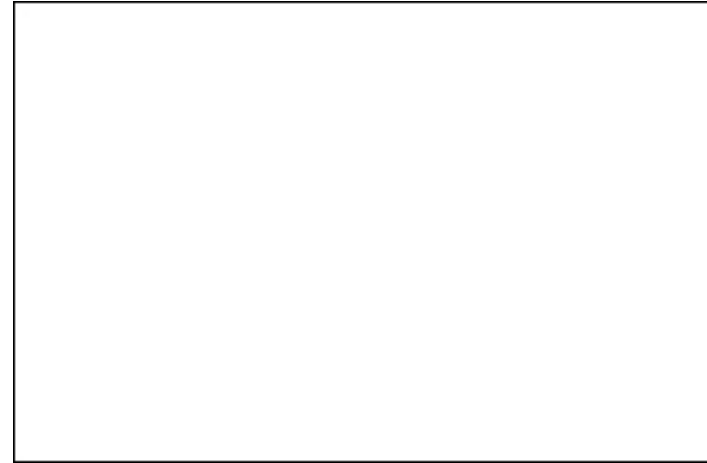


Figure 7 Troika Ranch's Future of Memory
<http://www.troikaranch.org/galleryFuture/g-future.html>

The alter ego type relates to the concept of a conscience and is often seen in literature accompanied by a darker version of the self while an anguished protagonist struggles with finding the right path. These two figures probably derive from reflection and shadow.

The third type is the **digital double as spiritual emanation**. Many animist cultures held beliefs about the existence of a shadowy spirit world where souls could travel independently of the body. Rather than the duality of the Cartesian mind–body split, this system of belief is holistic. There are some similarities here with Elizabethan beliefs

about death and the supernatural. The ghost of Hamlet's father seems trapped in a limbo spiritual plane which might be appropriately presented using digital techniques. I sought to reflect the theological ambiguity of the ghost's nature by placing him in the physical reality of the stage and have Hamlet appear as a video projection. The purpose of this was to reverse the expected positioning of the real and the supernatural and locate the audience with the object of most doubt. Macbeth is another play with obvious possibilities. The weird sisters could be candidates for a digital treatment with all the special effects available in video technology.

The last type of double in Dixon's taxonomy is the ***manipulable mannequin***. Digital puppetry, digital bunraku and live animation have found a place in theatre productions, starting with the digital character Mike Normal created by Brad DeGraf and Michael Wahrman and presented at the 1988 SIGGRAPH convention. From the actor's perspective it is interesting to compare two different ways of controlling a mannequin. On one hand there is the experience of performing off stage as an operator with only

a digitally embodied representation of the performance visible to the audience. And then there is the case of acting on stage while having live control of a digital character. The former, of course, is nothing new and relates to the experience of being a puppeteer. The latter might find a use where the audience is aware of the process and the technique is dramaturgically appropriate. In the Tempest, for example, Prospero, often through the agency of his bond-sprite Ariel, conjures up an immersive alternate reality for the seafarers. In his University of Georgia, Interactive Performance Laboratory production of Tempest 2000 (2000) David Saltz had an actor playing Ariel caged and visible on stage. She wore physical sensors which captured her movements and the sounds she made. This data was fed into a computer which translated the information into a rudimentary 3D animated character which was projected onto a screen at the rear of the stage. Other characters related only to the projection. The audience was complicit in the creation of the illusion.

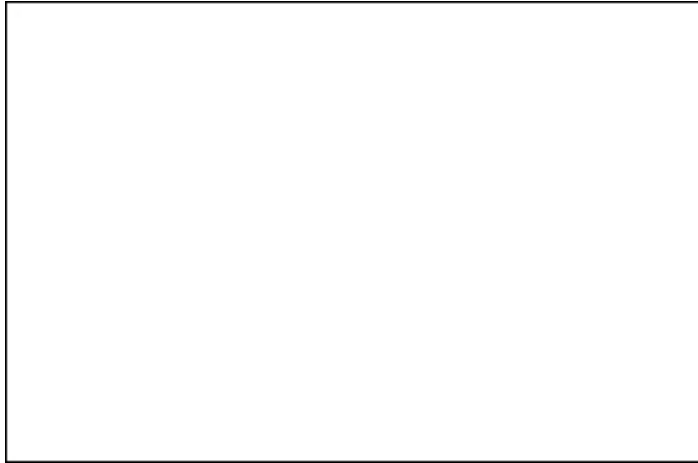


Figure 8 Marshall Marden & Jennifer Snow The Tempest, University of Georgia, Photograph: Peter Frey (Saltz, 2001)

http://muse.jhu.edu/journals/theatre_topics/v011/11.2saltz_figures.html

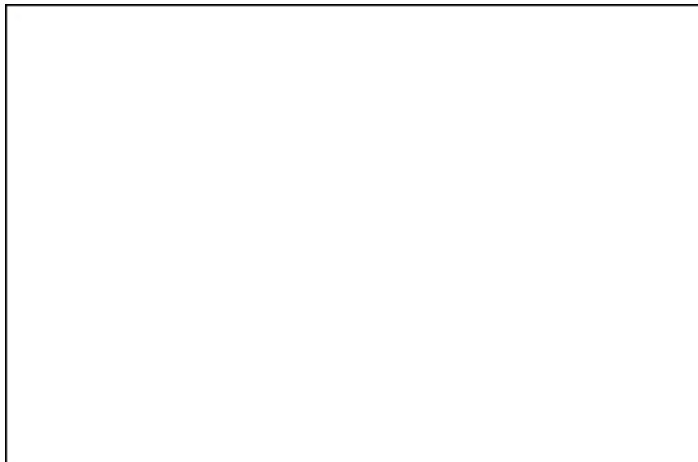


Figure 9 Marshall Marden in The Tempest, University of Georgia, Photograph: Peter Frey (Saltz, 2001)

http://muse.jhu.edu/journals/theatre_topics/v011/11.2saltz_figures.html

The animated character's mouth was able to move in concert with the actor's voice in real time. I suspect the director would need to put some very careful thought into exactly where the audience was expected to look at any given time. In the first folio there is the stage direction "by a quaint device" which suggests that Elizabethan audiences expected to have illusions created for them technologically. Whether this be by trap doors and wires or by digital projection is surely dependent on the technology available.

To this short list of types of digital double I would like to postulate a fifth: the **digital double as externalised alternate reality**. This is related to Dixon's types but is in the form of a reflected other. It refers not just to an individual but to the world they inhabit. Like the occult world of the witches in Macbeth or the ghost's purgatory in Hamlet this type of digital double is a reflection of an aspect of character which is realised digitally for the audience to view. It may be something which the character is fully aware of and inhabits or it may be a function of dramatic irony. In either case it has sophisticated dramaturgical usefulness for the purposes of this study.

The set and props are another area where digital technology may have a use. Andersen Machine, a Danish Theatre and dance company dedicated to the works of Hans Christian Andersen and 3 Legged Dog in New York use the same technology that put the Gorillaz and Madonna live on stage together at the 2005 MTV awards in Lisbon. They utilise high definition video projection and transparent screens to position realistic images in the middle of the action.

Digitally projected text, perhaps with interactive animation controlled by the actor is another possible technique. This early installation art piece by Camille Utterback and Romy Archituv (1999) called Text Rain could be used in a Shakespearian production.

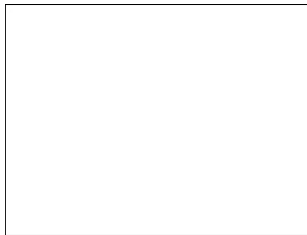


Figure 10 *Text Rain* by Camille Utterback & Romy Archituv
www.camilleutterback.com/texttrain.html

In it the performer (in this case – the viewer) is videoed and the image is projected onto a screen. Images of text fall, obeying the laws of gravity, and collect on any dark surface. The performer can therefore play with the letters, words and lines of poetry which form.

We can add another level of analysis to the issue of the digital double – the interactions between the performer and media. Salz (2001) identifies twelve of these; the following are most pertinent to my enquiry.

- *Virtual scenery* – the use of projected scenic elements is not uncommon in mainstream theatre. I first used it in a production in 1987. Slides of photographs of trench warfare were back projected on a cyclorama to create an ambience and helping to locate a play set in the First World War. It proved to be a very poignant addition to the action of the play. In my project I planned to use projected scenery only as a composited element behind video recorded characters.



Figure 11 Greg Johnson & John Leigh in Hamlet – against a green screen



Figure 12 Greg Johnson & John Leigh in Hamlet – composited into a stone wall background

- *Subjective Perspective* – Saltz identified the use of media to convey the inner or dream reality of an

onstage character. I used this approach in reverse where the projections often conveyed a dramatic irony and were visualisations of things the live character was not aware of. For example, in Macbeth the witches' true occult nature was projected in glimpses for the audience. Later, when Macbeth saw them, he was startled.

- *Affective Media* – is media, like a film score which aids the audience to an appropriate emotional or intellectual response but is not directly connected to the reality of the world of the play. In the scenes from Macbeth I used imagery of parasites, decay and death and found that they had to be reduced in intensity if they were not to draw too much focus.
- *Virtual Puppetry* – is the term Saltz uses to describe a digital image controlled by a performer and this was the very technique I used in creating Ariel, the inspiration for which was drawn from Saltz's production.

- *Dramatic Media* – this is the label he applies to media which assumes the role of a character in itself. The case of an animated Ariel that is driven by a live actor or a video projection of Horatio is one thing but Saltz raises the question of a character programmed with artificial intelligence to not only respond but to learn, adapt and initiate interaction. Broadhurst's Jeremiah is a step in this direction (Broadhurst, 2001). The hand of the artist lies behind any character in a drama but the distance of the artist from the manifestation raises issues of agency and liveness which are beyond the scope of this study. Is an unadorned actor more live than an actor wearing a mask or a puppeteer or a robot programmed with artificial intelligence?



Figure 13 Stephen Ure in Hamlet

As audiences become increasingly digitally literate theatre in New Zealand, in my opinion, needs to engage, grow and explore if it is to speak to its audience.

The key issues for me centre around the use of digital media to create alternate realities and the level of engagement achievable with those realities. Historically the development in this field can be interpreted as a search to

find ways to augment the audience experience and to extend the toolset at the disposal of the actor.

I am interested in integrating media elements so that they become part of the mise-en-scene and extend the audience's perception and experience of the various worlds of the play. The workshops were planned to experiment with a range of techniques, which appeared to have dramaturgical possibilities with respect to productions of Shakespeare's plays. I did not, for example, see any point in experimenting with allowing the audience to interactively drive the narrative since Shakespeare wrote tightly crafted narrative structure, which did not lend itself to this technique. However all three of the plays from which I have selected excerpts contain fantastical worlds with ambiguous layers of reality. Characters on stage are unsure of the space they find themselves in and of the nature of the creatures they encounter there: as Hamlet puts it: "be you a spirit of health...or goblin damned...". Audiences, both Elizabethan and modern are also unsettled and challenged when they find themselves at these intersections of

fantastical worlds. A natural response to this is to search for reflections of the familiar in an effort to understand the play. Therefore digital media techniques which create a sense of intersecting worlds and which reflect both the familiar and the unsettlingly strange in new ways seemed the most dramaturgically viable.

I locate myself within a theatre tradition which, like Artaud and Dixon's Chameleons Group, seeks to provoke questioning about universal truths. Shakespeare can be interpreted within that tradition and played with emphasis on the empathetic engagement of the audience in the story. I was not seeking to encourage emotional disengagement to isolate critical objectivity in Brechtian style. Bearing that in mind it was essential in the workshops to find ways of integrating the media so that the audience could accept it and remain committed to the moment. Central to this aim was discovering how the actor might be able to encompass multiple realities simultaneously. How could I, as the actor appearing live, react to pre-recorded video projections of

other characters and maintain a believability in the connection for the audience?

The workshop organised around Macbeth came first and allowed us to experiment with a single relationship where one character always appeared live. The Hamlet workshops which followed, extended this with video and corporeal realities swapping back and forth as I played both Hamlet and the ghost. The Tempest workshops centred on achieving a level of technical presentation to portray a real time live animated character responding to a pre-recorded video. If we were able to find ways of integrating the media in the collaborative and creative practice of the workshop and rehearsal environment these could then be taken into the laboratory theatre production to explore in relation to an audience.

Creative Processing and Interpretation – the Workshop Process

“In a living theatre, we would each day approach the rehearsal putting yesterday’s discoveries to the test, ready to believe that the true play has once again escaped us.”
(Brook, 1968).

As part of the process of gathering data and testing the research questions which arose during this study I organised a series of workshops. While each used a different script and explored distinct digital media techniques there was also a progression of common elements. They fitted within a spiral structure of exploration, reflection and revisiting the problem.

Interplay between a live, co-present actor and pre-recorded actors – *Macbeth*



Figure 14 Elizabeth McRae



Figure 15 Alison Bruce



Figure 16 Kerynn Walsh



Figure 17 Margaret Mary Hollins



Figure 18 Kerynn Walsh & Ross Brannigan



Figure 19 Workshop discussions of *Macbeth*

Workshop Participants:

Theatre director – Margaret Mary Hollins

Actor / Researcher / Screen director – Ross Brannigan

Actor – Alison Bruce

Actor – Elizabeth McRae

Actor – Kerynn Walsh

Videographer – Blair Walsh

The first workshop was based around a compilation of scenes from Macbeth featuring the three witches, who were to be pre-recorded on video, and Macbeth whom I would play live. Dramaturgically Macbeth and the witches inhabit different worlds and the separation of them is evoked by one group appearing in video only. I wanted to explore the experience of interacting with a recording. At this stage the playback technology had not been finalised and there was the possibility of putting a pause / play controller in the hands of the actor. Howard Read, a comedian, used just such a technique in the 2008 Royal Variety Show. His comedic partner, Little Howard, was a projected, pre-recorded cartoon character. With timing lying at the essence of comedy and audience reaction dictating the flow of the performance it was essential for him to have as much control as possible. He concealed a remote controller in his hand and chose when to pause his cartoon sidekick.

I entered the workshop aware that certain issues would arise, such as the stasis of the pause state. Live interaction between actors can be likened to a game of pass-the-ball

where the one holding the ball may be the current focal point but all other actors are actively engaged and receptive. This state of dynamic tension and readiness to react is essential to the life and truth within any stage interaction. How would it be possible to pause a video and maintain that liveness; the active listening? In 3D animation and game programming the waiting character is usually designed to move subtly. This is possible if the image is interactively programmed and generated on the fly. In film and television the reacting character is either shown to be receptive in what is known as a “reaction shot” or is simply not shown. The precision of the timing is jointly created in these linear media by the performers and the editor. The closer approximation of live theatre is that of game programming. I considered the possibility of adopting that approach by appending a looping receptive state video to the end of pre-recorded sequences but time, resources and a suspicion that the result would not be convincing ruled it out. Real video of actors is not as easy to loop as a 3D animation.

In preparation for the workshop I made a DVD video of Macbeth's lines so that the actors playing the witches could experience playing with a pre-recording. I included listening sequences and added chapter points wherever a response began. A stormy night sky background was composited in to show what the video post production could add after shooting against the green screen. I hoped that this technical orientation would empower participants to explore the possibilities.

We discussed the scene in detail and the concept of live / pre-recorded interaction. All participants had extensive screen and stage experience but had not combined the two. The first question which arose was the level of performance required. The term "level" is used by actors and directors when establishing the performance style of a piece. Screen acting, and especially film acting, is far more internal than stage performance and requires a different level of performance. This does not necessarily imply any difference in the psychological realism involved or the intensity of the performance. It refers to the emphasis

placed on the external manifestation of internal processes. Were the prerecorded sequences to match the stage performance of the live actor or to veer towards the cinematic? The theatre space was intimate but the screen appearances would sometimes be even more intimate with close-ups on two metre high screens. We decided to experiment with a level which was screen-based but heightened somewhat in the direction of an intimate stage.

Spatial relationships were explored in front of a green screen in AUT's chroma key studio and we became aware of the necessity for intricate planning of screen position and scale before recording. Such things as eye lines and level of performance were highly dependent on this. When two actors look at each other the audience needs to believe that there is a connection. On stage this is usually a simple and direct line of sight and poses no technical problems. However when working on screen actors are often asked by directors of photography, whose task it is to consider issues of visual continuity, to artificially create an eye line. Often the shot being composed does not include the other actor.

If the other actor is not present on set a substitute is used to create a focal point for the on screen actor. Sometimes the eye line is altered from the real physical spatial relationship on set so that it appears more real when viewed on screen. This is called “cheating” an eye line and is difficult for an actor intent on reacting to a fellow performer.

The planning for shooting footage for the final production could not be done until the experimentation was complete. For the purposes of the workshop I made a decision on these issues on the spot based on the positioning and relationships which emerged organically in rehearsal. This was one issue which grew out of the difference between the worlds of theatre and academic research. The actors were all acutely aware of the desire to connect with other performers. From their screen experience they appreciated that this was something which was sometimes out of their control. From my research perspective I wanted to find ways of making the connections but the lengthy process of production of pre-recorded materials precluded an

immediate solution. The work of rehearsal does not easily accommodate such delays.

The three actors were of distinct generations and constructed their characters out of this. This in turn had a large bearing on locating them spatially and in terms of status. I decided that the occult nature of the characters leant itself to both building on and breaking cinematic continuity conventions. I wanted their presence to combine elements of the immediacy of live stage play with freedoms associated with screen performance. For example, as manipulators of Macbeth’s world I saw them often as above him, seen as from the inside of a crystal ball. The idea that they might appear briefly on one screen to Macbeth’s right then instantaneously cut to one on his left would reinforce their supernatural nature with a sense of non-corporeality. It would be as if they were not bounded by space and time in the way that Macbeth was. This technique would be based on the cinematic convention of the cut but would cut across the theatrical convention that an actor is fixed in a linear space-time relationship. It would give the live performer something very visceral to react to and remind

the audience that they were not watching a piece of cinema.

The witches in Macbeth appear both real and “fantastical” to Macbeth and their exact nature is indeterminate. This allowed or even demanded that screen and stage conventions for conveying a sense of realism be re-examined. In order to show this duality I chose a directorial concept of a nostalgic New Zealand beach where familiar, ordinary women might sit around a beach bonfire wrapped up against the night cold. At times, especially when Macbeth was not looking, their deeper nature would appear in flashes set against explosions of flame.

Video projection was used to create a digital double as

externalised alternate reality. It achieved this by the visual content and the semantics of cutting from screen to screen.

The footage shot in the workshop was usable in the final theatre production but it showed the value that would have come from an extension of the process. A further rehearsal and production iteration would have allowed for planning the intricate interplay of the pre-recorded and the live. The use of a controller by the actor was not considered valuable by participants. They felt more comfortable with the approach of simply timing a live performance to a pre-recorded fixed structure. Taking the constraints of time and resources into consideration I decided to shelve that avenue of exploration.



Figure 20 Alison Bruce



Figure 21 Alison Bruce, Elizabeth McRae, Kerynn Walsh



Figure 22 Kerynn Walsh

Manipulating a digital double – *The Tempest*

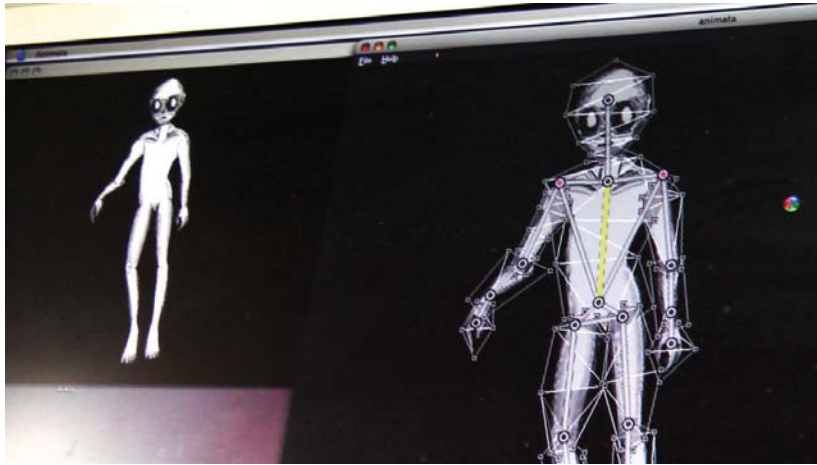


Figure 23 Ariel – rigging the character in open source software Animata



Figure 24 Experiments with infra red LED

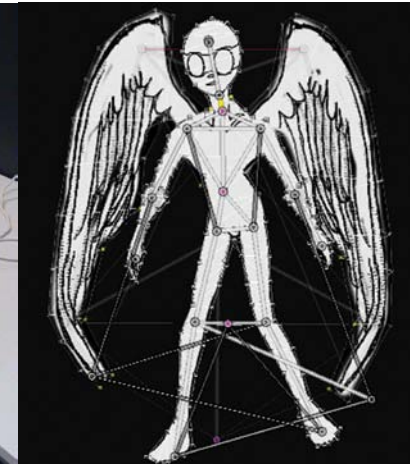


Figure 25 Ariel – rigged with wings

Workshop participants:

Interactive artist / programmer – James Charlton

Interactive artist / programmer – Kim Newall

Theatre director – Celia Nicholson

Actor / designer / researcher – Ross Brannigan

Another workshop series centred around a compilation extracted from *The Tempest*. This was to involve the pre-recorded presence of Prospero who would appear as a remote manipulator of events within a modern, technologically advanced world. Ariel would be played live and would appear simultaneously on stage and on screen. My corporeal stage Ariel would consciously prepare to do Prospero's bidding by donning costume items which were capable of inputting data to a computer. The computer would interpret my movements and alter my voice to project an animated version of Ariel on screen. The audience would be aware of the constructedness of this illusion as befits Shakespeare's intention in the scene. Ariel, a spirit of the air, is a bonded character who creates illusions for his master. Which version of Ariel the audience would pay attention to at any given time would be determined by lighting changes and audience choice. The inspiration for this came from Saltz's 2000 production *Tempest 2000* at the University of Georgia's Interactive Performance Laboratory (Saltz, 2001). In this experimental production he used physical sensors wired to the actor playing Ariel and a very rudimentary 3D animated character. The

character was projected onto a screen at the back of the stage.

It seemed to me that, from the perspective of an actor, there was a danger that the technique would call for a performance which strayed too far from acting, veering towards that of puppetry. Actors are not used to the distinct mindset and skills required for this type of work. In the scene envisaged however the actor would be visible and his movements might be able to be unselfconsciously real and therefore more closely related to the craft of acting. As an actor I aimed to reject compromises and limitations in the technology if they produced too many encumbrances. For example, in motion capture technology, which is focused on recording the movement of a specialist actor and transposing that movement onto an animated character. Some systems force actors to wear restrictive suits with large reflective markers or electronic devices to measure position attached to them. In extreme cases they can involve physically shackling actors with cabling. There are camera-based alternatives emerging which only limit

the actor to a particular space. As a performer this is by far the most useful technology and I determined to see if a solution could be found to fit the needs of a low budget production.

Workshops for the scene split into two distinct series with one focusing on the acting, as much as possible without a working model of the technology. A second series focused on getting the technology to a workable and, most importantly from the perspective of the actor, reliable standard so it could be used as a creative tool. James Charlton and Kim Newall who were both experienced in the use of aspects of this technology in their art installation practice collaborated in these workshops. It seemed to me that whatever system of data capture were used it should not be an encumbrance for the actor. We experimented with camera tracking using infra red LED lights which could be stitched into a costume. These would be located at key points such as the hands and head which would show expressive movement.

Tracking bright colours by camera was another variation which proved highly dependent on lighting as did camera tracking of a silhouette. A last minute attempt was made to switch data collection from cameras to input from an actor-controlled piece of hardware. We looked at using a hacked game controller or an Arduino device. These were programmed through software such as Max/MSP and Jitter and free software interfaces such as OSC and Eyesweb to an open source live 2D animation package called Animata. The reliability of the data delivered to Animata varied but the principle was shown to have great possibility. I designed an animated character for Ariel which was simultaneously male, androgynous, a tabula rasa and mischievous. I toyed with the idea that he might transform into a skeletal harpy with wings based on the green and orange plumage of a New Zealand kaka. The result of all this experimentation was that the technology proved tantalisingly close to the desired level of robustness but could not be relied upon to deliver a satisfactory result. Since the study is from the primary perspective of an actor I decided to include only a mockup version of the scene to

indicate what might be possible given the time and resources.



Figure 26 Ariel

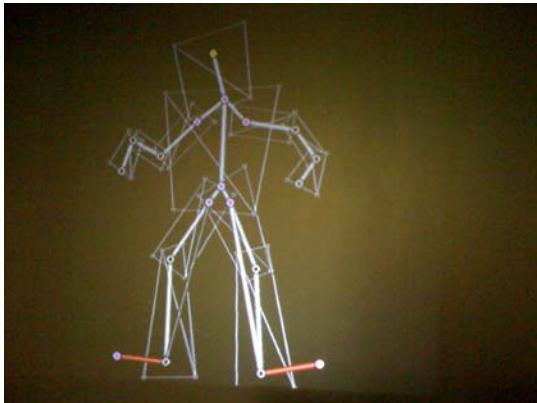


Figure 27 The actor's silhouette as interpreted by open source software Eyesweb

For the dramatic content I collaborated with theatre director Celia Nicholson who was able to keep the technological concept in mind as we explored the scene. She had experience of the sustained use of video projection as a backdrop in her recent production of *The Cape*. She thought that Prospero's screen performance would be best at a Television level, which was a different approach to that decided during the *Macbeth* workshops. Since Prospero is a very different presence akin to teleconferencing I thought that the difference might not be obvious to the audience while permitting exploration of an alternative level. She had thought that Ariel might flit from screen to screen, especially in the first half of the scene. As the parallel technical workshops progressed I began to worry that this might not be possible so a simpler eyeline for Prospero was shot, placing Ariel in a single location. The difficulty of exploring the technological and video production aspects of the enquiry became overwhelming and the preparation for performance suffered. This was another instance of the cross over between the worlds of research and theatre practice not meshing as well as might be hoped

Hamlet



Figure 28 Peter Elliott



Figure 29 John Leigh Stephen Ure Peter Elliott



Figure 30 Peter Elliott



Figure 31 Ross Brannigan



Figure 32 Greg Johnson John Leigh Stephen Ure



Figure 33 Greg Johnson Ross Brannigan Stephen Ure John Leigh

Workshop participants:

Director – Peter Elliott

Actor – Greg Johnson

Actor - John Leigh

Actor - Stephen Ure

Director of photography – James Nicholson

Camera operator – Liz Hoyle

Sound – Blair Walsh

Actor / researcher – Ross Brannigan

There were two separate compilations from Hamlet. Each explored a different technique. The first was a look at the ghost scenes with collaboration from a video shooting team of James Nicholson, Blair Walsh and Liz Hoyle. The actors were Stephen Ure, John Leigh and Greg Johnson and the theatre director was Peter Elliott. Again the focus was on developing an understanding of how a live actor could interact with pre-recorded video content. Peter Elliott came with an appreciation of what I was proposing and a strong vision of his own.

Playing multiple roles both co-present and pre-recorded - *Hamlet*

One of the most exciting aspects of work in the theatre is that it is always collaborative and the search for the truth in a production develops in the interaction between actors, directors and the design team. This happens first in rehearsal and then with the audience in performance. This complex matrix of input and cross fertilised idea generation is a very stimulating environment to work within. It

generates knowledge in a very practical way and rapidly tests proposed solutions within that same practice.

The academic research community is moving towards accepting this type of work as research but it does not fit well with traditional scientific methods where one hypothesis is isolated and tested in a very controlled environment (Trimingham, 2002). Theatre and even digital media rely on a much more organic and multifaceted approach to enquiry.

Initially I imagined that the ghost scenes could be as experienced from the perspective of the ghost with the live actor playing, variously, Hamlet and the ghost of his father. To that end the recorded video of the other characters could be obscured and fade from the ghost's consciousness and the audience's view as communication became difficult with the approach of dawn. I thought the use of a semi transparent screen might allow Hamlet and the ghost to seem to emanate from each other. Perhaps the

ghost could be frenetic and bandaged with blood and poison weeping from his eyes and ears. This is in direct contrast to the way he is normally played in sombre slow movements with body obscured by armour. The script makes reference to armour but since I was making cuts as I compiled a working script it was easy to leave these references out. The cuts proved successful and, I believe left the playwright's intentions intact. He could speak into a live camera and the resulting video could be processed to make it blurred, muffled and slow motion with flashes of it appearing across a sequence of screens. He could react to the voices of the other actors as though he could hear them perfectly thus conveying his frustration at unequal communication between the world of the living and purgatory. Hamlet and the ghost would swap between live and mediated as the truth of the murder of the king emerged. Eventually this was discarded and a decision made to use opaque screens and to never represent the ghost in a video recording. Peter's concept included keeping all characters present throughout the scene eschewing the cinematic confusion of cuts in favour of a sustained video presence for the characters on screens

with a realistic spatial logic. This meant that we had to shoot all actors listening and focusing on the appropriate point. The time allowed for the live actor to speak was more or less dictated by what we shot here too. The screen layout and the blocking of the live actor had to be fixed for this to work. Peter likened the resulting performance to a dance with every element precisely choreographed and timed. In performance there would be no room for mistakes.

Auslander talked about the privileging of one form of media over another (Auslander, 1999). In particular he theorised that when a video image was projected on screen next to a live performer then the audience's attention would be drawn to it because of issues such as size, brightness, novelty and the privileged status of video in popular culture. Peter's response to this was typical of a practitioner. His advice was to be better than the video. An actor should be able to grab the audience's attention and whether that was possible in this case had to wait for the performance to test.

In response to the question of what level to play the recorded elements at Peter thought that the level appropriate to a public play reading would pitch the pre-recorded sections at the best compromise. The first workshop session with the actors equated to a readthrough in the terminology used in theatre. The actors quickly gained an appreciation of the concept and brought their own screen and stage experience to bear. I had decided on a draft screen layout in consultation with Peter, as director and James Nicholson as director of photography. The intention was to let the draft be amended after discoveries were made on the rehearsal floor. In order to orient the team to the concept I prepared a model of the performance space with screens and showed some sample videos and photographs of productions which had used digital media before.

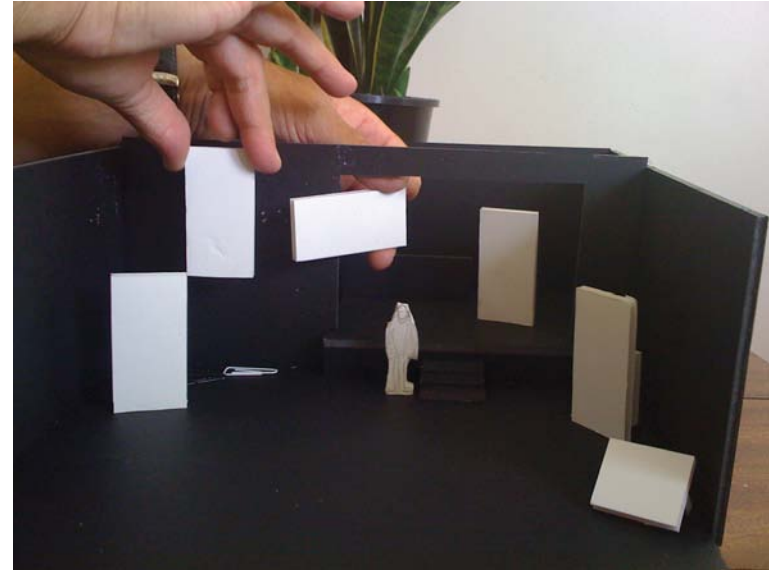


Figure 34 set model showing multiple screens

One problem arose over the point in the scene where Hamlet and ghost were co-present and we had decided that Hamlet would be physically present and the ghost would never appear on screen. How then to represent the ghost? On the line “Look my lord, it comes” all characters had to see the ghost. If their eyelines were fixed on a point behind the audience then there was a danger that the audience expectation would be that the ghost would make an appearance behind them since they had already seen hm

“in the flesh” as it were. We decided that the screens, while not showing the ghost might all buzz with static and dropouts when the ghost’s energy was strong and disruptive. Peter solved the problem of where to look by

picking up the video camera and carrying it as though he were the ghost inspecting the terrified onlookers. Thus the video became the ghost’s point of view.



Figure 35 Stephen Ure

Figure 36 Stephen Ure, John Leigh, Greg Johnson

Figure 37 John Leigh, Greg Johnson

The next workshop was to result in the footage needed for post production. I pre-recorded the ghost’s final speech so we could play it while Hamlet could be shot responding. We used high definition cameras and shot against the chroma key screen as usual to facilitate compositing in new backgrounds in post production. However the hand held point of view shots on the ghost’s arrival were shot against

blackness otherwise the camera movement would have been impossible to replicate in a composited background.

The amount of work involved in organising this project and running simultaneous workshop series was immense and the multi-tasking had led to a certain lack of focus on my part. Peter posed the question of which element was most

important at this stage to me. Was it the conceptualisation, the technical preparation or the acting integrity? The answer of course was that at the point of performance on stage or for the camera it had to be the acting and I had neglected this. One of the actors later confided that he would have found it easier to perform if I had been better prepared and off the script in order to support him. This is yet another example of a disjuncture between the academic research needs and the needs of the actor.



Figure 38 Peter Elliott watching screen performances during shooting

Playing both the ghost and Hamlet in this compilation was dramaturgically interesting. The ghost purports to be Hamlet's murdered father but in Elizabethan terms that is

likely to mean either an angel or a demon adopting the appearance of the dead king. The ghost never appears visually in the video projections but his presence is manifest in the point of view shot and his disturbed energy is implicit in the deliberate signal interruptions we introduced. When he sees the ghost Hamlet is "struck so to the soul" by the reflection of his own inner turmoil in this digital double which, in Freudian terms is an intimation of mortality (Dixon, 2007). Having father and son played by the same actor helps the audience make the connection. In Dixon's terms this use of the digital double is many-faceted: it is a reflection, an alter ego and a spiritual emanation. The one thing it certainly is not is manipulable.

With the footage on computer the process of post production could begin. My wife, Kerynn Walsh volunteered to help with editing and it would not have come together without her. I set up a workflow across a variety of computer platforms and applications to edit the footage and then composite in the background elements. As this process evolved it became obvious that the undertaking was akin to a combination of putting on a one man stage

play and making a film. It was an extremely time consuming study. Again the needs of live performance and pre-recorded media elements had to be juggled to create a workable compromise. Eye lines and the timing between live and video had to be assumed to move forward in the process. Ideally they should then have been rehearsed in an approximation of the performance / screen space and then refined. In reality there was no time or provision for this. The use of multiple screens was not something that the editing software could easily display and so the editor had to work in the dark as to how the discrete video elements would play in the theatre. The development of a custom software player which would allow playback of multi screen video simultaneously would aid the video editor.

Motion graphics and digital soundscapes

There were two more elements where the assistance of outside collaborators was necessary. My concept of the production included high quality music and motion graphics which would be used in introductory, concluding and intermediate sequences to link the show together and give it a sense of cohesion. To this end I asked Graeme Marshall to work on adapting my brief and media to motion graphics which could be used on multiple screens. He worked at realising my creative vision and added his own insight in the process. In parallel I was working with Nathan Rea on music for the production. He is accustomed to scoring film and performs as a musician in bands so was excited by the prospect of making a theatre piece. I brought a description of the emotional shifts, sounds and rhythms as they had occurred to me and he composed these into evocative soundscapes for each sequence.

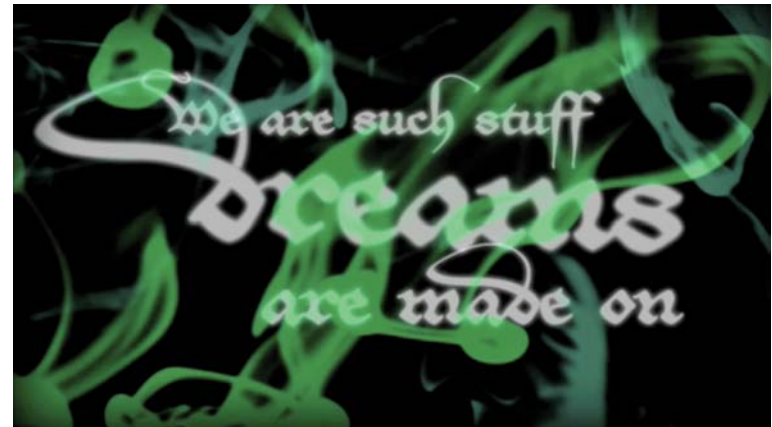


Figure 39 Motion graphic sequence leading into the Tempest scene

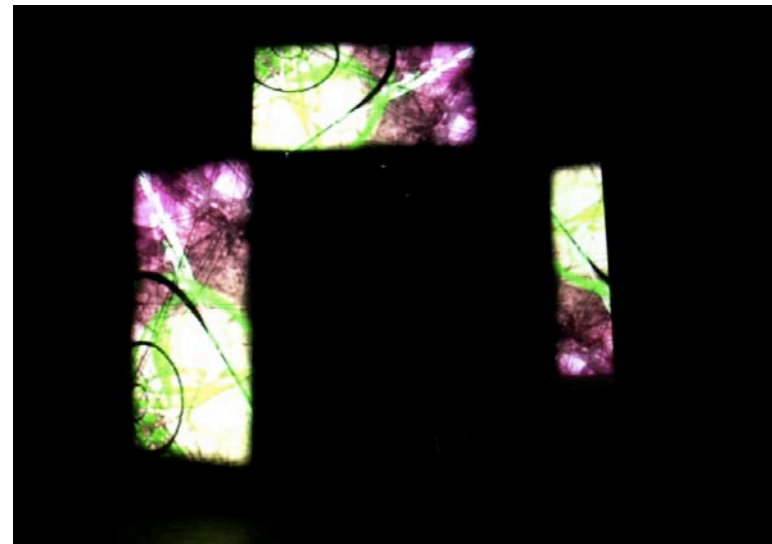


Figure 40 Motion graphics as projected on 3 screens during performance



Figure 41 Motion graphics sequence leading into Hamlet soliloquy



Figure 42 Interaction between live actor and motion graphics

Using a camera live as a tool to communicate intimately with the audience

The final Hamlet scene was a soliloquy which was launched by one of the motion graphic / musical sequences. I stood against a screen while a swarm of miniature silhouettes of me danced around me. This was a tangible linking of the live and the mediated which could be seen as digital double a reflection of inner turmoil. The soliloquy which I had conceived as a monologue with the audience was delivered as a video confessional. Based on the idea of participants in reality television shows speaking in private directly to the audience, Hamlet placed a video camera in front of him and shared his intimate feelings which were projected on a large screen above him. Which version of Hamlet would the audience choose to look at? Lavender describes how an audience's awareness of the present moment can be enhanced when both live and mediated elements are combined. He sees a sense of being doubled; of being simultaneously elsewhere in a situation like this (Lavender, cited in Power, 2008). It seemed to me that this technique was able to combine the immediacy of live theatre and the

intimacy of a television experience. At times when the emotional response was too great for Hamlet to confine himself to the tiny camera he broke away and moved around the stage; at which point the large screen was blank. In this way the performer was able to add an element of control to where the focal point of the scene was.



Figure 43 Ross Brannigan as Hamlet

The final phase of production proved the most arduous. Ideally there would be time to set up in the theatre space and rehearse with real spatial relationships but the exigencies of slotting into a Fringe Festival meant that there

was very little time available. In the event the previous night's show did not clear the space on schedule resulting in a drastic reduction of what little time had been planned. The technology chosen for projection onto multiple screens was simple but not finally proven until the performance day. Originally I had been planning to use a free multi-projection application called VideoProjectionTool but it proved unreliable and its ability to sequence the individual shots was obscure. I decided to swap to compositing each of the individual shots into one long video. The plan had always been to project it through a single projector. The location of the individual screens had to be set and then each video clip mapped or key stoned to match the screens and the projector's angle. This could only be done after the space had been set up. Rendering would take many hours. This meant that most of what little time I had was spent on refining technical elements and not on performance. The first time the show was run from start to finish was in fact opening night! I do not recommend this as a fruitful approach. It neglects the symbiotic relationship between the live and the mediated and runs the risk that the two will not converge meaningfully in performance.



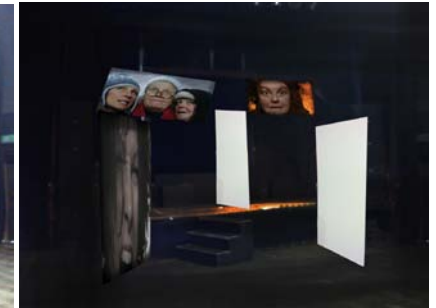
Figure 44 Erecting screens



Figure 45 Projection experiments



Figure 46 & 47 The stage at Galatos (MIC Toi Rerehiko) with screens for performance (mockup)



The Research Methodology Applied – the Performance

The workshops and rehearsals culminated in a performance as part of the Auckland Fringe Festival, 2009 at Galatos Theatre. This will be repeated for examination in July 2009 at The AUT University Chroma Key studio in Auckland. The performance itself forms the major part of this thesis (80%). It is an exploration, dissemination of findings and an invitation to participate in the discourse. The audience received the production enthusiastically as an experimental laboratory performance. Many came up to me afterwards excited by the possibilities for theatre. A large proportion of the opening night audience were actors and directors from the theatre and screen industry, while the second night drew a more general audience.

The final expression of the research process is the laboratory performance. It embodies the exploration of the issues at the centre of this study. Many creative decisions and interim conclusions have been drawn during the workshop series but only in performance can they be fully explored and tested in the interplay between production

and audience. Achieving a state of, as Coleridge put it, “willing suspension of disbelief for the moment” was my aim in presenting a compilation of Shakespearian scenes to an audience. I would consider the digital media techniques useful only if they worked in concert with the live actor and other elements of the production toward that aim. It was imperative therefore that delivery of the techniques be as seamless as possible. A great deal of preparation had gone into video post production to deliver video with values commensurate with audience expectations. Modern audiences spend far more time viewing television and watching film on DVD or at the cinema than they do at the theatre. They are sophisticated readers of the moving image and would not be satisfied with low production values. I suspected that if the video elements were of low quality the audience would find them jarring and not accept them as part of the world/s of the play. They would therefore be less willing to suspend their disbelief and not immerse themselves in the dramatic fiction. Eventually the projections reached a satisfactory standard but the process was extremely time consuming and did not allow for the fine

adjustments that are necessary when something is deployed for the first time in a new venue.

Galatos is an interesting venue owned by MIC – Toi Rerehiko, the Media and Interdisciplinary Arts Centre in Auckland. It is often used for experimental film and VJ evenings and has a reputation for alternative and youthful audiences. It has a tiny stage bounded by enormous speaker towers and a large (historically significant) parquet dance floor. With a good video projector mounted high above the audience and a relatively intimate scale it was a very promising venue. As part of the Auckland Fringe Festival the production was assured of an experimental and positive context. There was a drawback in agreeing to mount the show as part of a commercial arts festival in that it did not fit the known development schedules of traditional theatre. With everything being experimental there was no guarantee that it would be ready on time.



Figure 48 Ross Brannigan as Hamlet

It proved difficult to get satisfactory clarity on the video screens, especially when stage lighting bounced off the live actor and illuminated them. This would need further investigation and in the two night's performances it was decided to place emphasis on the screens rather than light the performer sufficiently since the actor could find a lit area but the screens were fixed. With more time and resources to invest in a lighting plan it should be possible to minimise lighting spill and keep both aspects as visible as possible to the audience. I was helped in this by the show's operator

Josh Preston who had experience working with Pitch Black, a New Zealand Electronic music duo which uses interactive video, audio and other digital media techniques in their shows.

During a performance many elements come together to create a unique event which exists momentarily in the imaginations of the audience and performer. Each performance will differ, it is not possible to replicate outcomes. The performer arrives with a wealth of preparation and creative choices having been made but there will be significant variation on the night based on accidents of interchange between the audience, performer and technical deployment. New creative directions may arise as the performer is inspired by, for example, the strength of audience response to a particular delivery of a line. The audience will bring its own expectations individually and collectively and this will vary markedly, especially in an intimate space with small numbers.

Conclusion – Evaluation and Significance

The experimental one man show was an invigorating validation of the work-in-progress. It showed that fears about the disjoint nature of screen and live acting were not unfounded but neither were they insurmountable. The second night showed that when the timing and engagement with pre-recorded pieces was aligned the audience accepted the connections and was willing to surrender their disbelief. Saltz proposed that the insertion of linear media into a live production would not result in dramaturgically meaningful theatre (Saltz, 2001). He thought it would merely result in the worst aspects of both being combined. The actor would take on the flat “canned” nature of the screen and yet would not benefit from editing, selection of the best takes or addition of special effects that film entails. From my perspective as an actor I cannot agree with this proposition. When the timing, spatial relationships and quality of performances and production come together there can indeed be a sense of real connection between the live and the mediated. It is something I felt in performance, and this belief was supported by audience feedback during and after that performance. As Manovitch put it, digital

compositing can create a “synthesis of a coherent space” (Manovitch, 2001, p.147). He may have been referring to compositing for the cinema but it holds equally true for the hybrid cinema / theatre space created for this project.

I found that the acting style required by this space called on the skills and approaches demanded not just in theatre and cinema but also in interactive video. These combined to create a new acting style. From my perspective all acting styles have, at heart, the same goal. They all explore the truths to be found in the piece with the audience. Shooting a performance without an audience present requires that actors use their imagination and whatever human resources are on set as they try to make an individual communication with each potential audience member. The level of acting is essentially one to one. The actor assumes that the single audience member is in intimate proximity and that the camera (and later the editor) will convey this. On screen the actor must do without the moment by moment feedback that comes in live theatre. In interactive screen work the narrative is divided into chunks and the actor must often surrender knowledge of how the story will next connect.

This is particularly difficult for an actor since it is not possible to play ambiguity. A character has an intention and the actor must decide and play what that intention is. For example consider the case of a play which ends with a character poised on the parapet of a high-rise building. The director wants the audience to be unsure whether he is deciding to jump or just admiring the view, having come to some sense of satisfying resolution. The director requires the performance to appear ambiguous to the audience but that is not achieved by the actor playing two intentions at once. This is not possible within an acting style which values psychological realism such as that within which I place myself. The actor must decide whether the character is thinking of jumping or not. Cinema is divided into narrative units as well but they are arranged in linear fashion dictated by the script. They are usually not shot in order however so actors are used to carrying the arc of the narrative in their heads as they approach each shot. In cinema, action which is not shown does not exist but in this project, at least in the Hamlet scenes, the narrative was continuous. This required an acting style more akin to theatre where active listening and engagement with the

scene was required at all times. Like cinema there would be no real link with the live actor and, during recording, the placement could only be approximated. During live performance the actors pre-recorded and projected on screens had fixed eye lines and were shown at scales different to the live actor. In order for the spatial relationships to appear believable to the audience the live actor needed to sometimes stand upstage of the screens and therefore could not see the projections. The timings of line deliveries were fixed and therefore opportunities to make allowances for shifts in audience attention or response were limited. Any overlap of lines might draw attention to the media and interrupt the audience's belief in the performance. In practice I found this difficult but when overlap actually occurred I was able to incorporate it into my performance and, since it is a natural feature of conversation it enhanced the believability of the scene. There were certain benefits to be gained from knowing precisely what the other characters would do. At one point it was suggested that I cough to cover a line hesitation by one of the pre-recorded actors. This level of coordination could only happen if one performance was a given.

Having an external controller of timing, just as a lighting operator times the lights to a performance, might be beneficial. However most actors in the workshops felt they would rather time their own performances to the known constraint of the prerecording than rely on an external agent.

Solutions emerge when technologically literate performers and directors experiment in rehearsal, preferably with prototypes of the technology available. This was shown when one theatre director, Peter Elliott, picked up a camera and experimented with narrative framing in rehearsal. Often digital media is seen as an additional element that only a specialist might engage with but in order for a freedom of experimentation to happen there has to be a willingness to empower all participants.

Use of the technology is problematic. The weight of work involved in experimenting technically and in creating the various media elements threatened to envelop the

performance preparation. There is also no doubt that relative privileging of media could overwhelm a performer if not handled sensitively. In many respects the technology has many parallels in non-digital effects which have been used throughout theatre history. I have worked with a character played by a puppet before, to the delight of the children in the audience. They seemed to have no trouble relating to it as though it were as real as a human character. It was manipulated live by an actor / puppeteer and therefore the elements of timing were live. However there was the problem of orientation. It was not always possible for the puppeteer to see exactly where I was and it was therefore up to me to position myself to make eye lines believable. This is exactly the same constraint when working with projections.

The research questions developed throughout the process but in essence the central issue of the dramaturgical usefulness of techniques remained constant. The main question was that of the problematic relationship between the live and the mediated as seen through the lens of

Dixon's digital doubles. Rather than just asking whether the relationship was problematic I soon accepted that although it was there was more to be gained by exploring the ways in which it was and how those might be overcome or avoided. Co-presence with a mediated embodiment or digital double raised problems of:

Privileging of one over the other

Eye line believability

Altered interactivity

Unresponsive and unforgiving timing

Requirement for skills outside the role of actor

In rehearsal, performance and on reflection I came to the conclusion that these problems might be best addressed by:

- Carefully managing the desired focal point at any given time and designing the media and directing the performance to adapt to live and screen presences.
- Adopting screen performance techniques during live performance, especially the need to manage eye lines and to internalise unseen spatial relationships.

- To remain responsive to the audience and to react to exigencies of the performance as it unfolds with thorough familiarity with the recorded media. This entails a greater control over the shaping of the scene and more constraints on giving yourself over to "the moment".
- The opportunities to recover from any lapse in delivery timing are known and fixed so it is a double-edged sword.
- The manipulation of a digital double can be managed within the skill set of the actor if the production design is mindful of it. Otherwise a puppeteer might be more profitably employed.

The significance of adopting a practice-as-research approach in the enquiry is that this enabled exploration that other methods would have obscured. Since the central issue was of the usefulness of digital media techniques from the perspective of the actor then it was essential that they were trialed in practice and not just in theory. Spatio-temporal issues became apparent during both the workshops and the performance. There is also the

important issue of the meaning that is generated at the point of performance. This can only be fully known by the actor in the moment. The lessons learned in this enquiry should be of use to the creative community of practitioners who wish to incorporate digital media in their theatre work. Indeed the lessons learned in relation to compositing mixed reality, live and mediated in one performance event could have significance in many fields; from performance art and augmented reality gaming to public relations events.

This study has barely scratched the surface of this field and there could be profitable research avenues in the incorporation of more techniques which require extensive use of technology or high-end programming. The preliminary workshop exploring the creation of an animated character would benefit from the investment of time and money in dedicated motion capture solutions. This could yield results in new types of live theatre and digital media hybrids such as a projected cartoon story created live or a

type of improvised cartoon made out of suggestions taken from the audience.

This research project has been an invigorating experience and has altered my practice as an actor and digital media producer. The workshops have shown the value of the collaborative and exploratory process and reinforced my belief in the value of that point in performance where actor and audience come together to gaze into the mirror, digital or otherwise, that is theatre.

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